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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/796,302	03/10/2004	Yoshinobu Suehiro	PTGF-04009	9113

21254 7590 04/23/2007  
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VIENNA, VA 22182-3817

EXAMINER
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PATEL, ASHOK

ART UNIT	PAPER NUMBER
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2879

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/23/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/796,302	SUEHIRO ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Ashok Patel	2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 March 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-6 and 13-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 3 is/are allowed.
- 6) ☒ Claim(s) 1,2,4-6,13-16 and 19 is/are rejected.
- 7) ☒ Claim(s) 17 and 18 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

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1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the light emitting device including all of: (1) a phosphor layer, an optical system including a convex lens (as recited in claim 13); and (2) a phosphor layer including plural layers, and an optical system (as recited in claim 17) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR

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1.121(d). If the changes are not acceptable by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. Applicant's arguments with respect to claims 1, 2, 4-6 and 13-17 have been considered but are found persuasive.

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

4. Claims 1, 2, 14 and 19 are rejected under 35 U.S.C. 102(a) as being anticipated by Yuji et al (Japanese document 2002-076434, of record).

As to claims 1 and 14, Yuji et al disclose applicant's claimed light emitting device (at least Figures 21, 22) including: a light emitting element (10, 115) to emit ultraviolet light; and a phosphor layer (171, 183) that includes phosphor glass (see Detailed Description, paragraph 0064) to generate fluorescence while being excited by the ultraviolet light emitted

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from the light emitting element (10, 115), and an optical system (reflector 172, 181) to converge the ultraviolet light emitted from the light emitting element, wherein the light emitting element (10, 115) is disposed opposite the optical system (181).

As to claim 2, Yuji et al disclose the phosphor glass including at least  $\text{Eu}^{+2}$  (see at least Detailed Description, paragraph 0064).

As to claim 19, Yuji et al disclose the optical system disposed away from the light-emitting element.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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6. Claims 4-6, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yuji et al (as applied to claim 1) in view of Shinkai et al (USPN 4540915, of record).

As to claim 4, Yuji et al do not disclose the phosphor layer including a transparent material and particles including the phosphor glass dispersed in the transparent material, as claimed by applicant. Although, providing the transparent material phosphor layer with the dispersed phosphor particles in it is known in the art for emitting the light, Shinkai et al is cited for showing a transparent material and particles including the phosphor glass dispersed (see at least summary of invention) in the transparent material for emitting the light from it upon excitement by the UV from the light emitting element.

Therefore, it would have been obvious to one of ordinary skill in the art to provide Yuji et al's device including the transparent material and phosphor particles dispersed in, as taught by Shinkai et al, it for emitting the light upon excitement by the UV.

As to claim 5, Yuji et al do not disclose different kinds of phosphor glass particles, as claimed by applicant. Although providing different kinds of dispersed phosphor particles (see Table 2) is known in the art for emitting various colors, Shinkai et al is cited for showing different kinds of phosphor

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particles dispersed in the transparent material for emitting various desired colors from it upon excitement by the UV from the light emitting element.

Therefore, it would have been obvious to one of ordinary skill in the art to provide Yuji et al's device including the different kinds of dispersed phosphor particles, as taught by Shinkai et al, for emitting various desired colors from the device.

As to claim 6, Yuji et al do not appear to disclose the phosphor layer including a phosphor material other than the phosphor glass dispersed in the transparent material, as claimed by applicant. However providing phosphor layer in various forms is known in the art for carrying desired phosphors particles in it, Shinkai et al is cited for showing the phosphor layer including phosphor material other than phosphor glass, and the phosphor material dispersed in the transparent material (see col. 6, lines 35-68) for emitting light from the phosphor layer.

Therefore, it would have been obvious to one of ordinary skill in the art to provide Yuji et al's device including the different kinds of dispersed phosphor particles (see Table 2), as suggested by Shinkai et al, emitting light from the phosphor layer.

As to claims 15 and 16, Yuji et al do not disclose the phosphor glass including a low-melting phosphor glass with a fluorescence-activating element, as claimed by applicant. Sinkai

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et al is however cited for showing the phosphor layer including a low melting fluorophosphate phosphor glass doped with a fluorescence activation element (see Title of Invention) for generating fluorescence while being excited by the UV.

Therefore, it would have been obvious to one of ordinary skill in the art to provide Yuji et al's device including the low melting fluorophosphate phosphor glass doped with fluorescence activation element, as taught by Shinkai et al, for generating fluorescence while being excited by the UV.

7. Claims 17 and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

As to claim 17, prior art of the record does not disclose applicant's claimed light-emitting device of claim 17 (which includes all limitations of base claim 1), wherein the phosphor layer includes a plurality of layers including different kinds of phosphor glass.

As to claim 18, prior art of the record does not disclose applicant's claimed light-emitting device of claim 18 (which includes all limitations of base claim 1), wherein the optical



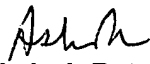
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system is disposed in an optical axis direction of the light-emitting element.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ashok Patel whose telephone number is 571-272-2456. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on 571-272-2457. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
**Ashok Patel**  
**Primary Examiner**  
**Art Unit 2879**